苏州大学 软件测试与质量保证 期末试卷（B）卷　　共 7 页

考试形式 开 卷　2023 年 3 月

院系 计算机科学与技术 年级＿＿＿＿＿＿专业＿＿＿＿＿＿

学号＿＿＿＿＿＿＿＿＿＿姓名＿＿＿＿＿＿成绩＿＿＿＿＿＿

1. Draw a graph and analyze the **bug lifecycle**. (8’)

2. Given the failures recorded, calculate the MTTF for June. (8’)

Month	**Dates**
May	7^{th}, 15^{th}, 26^{th}
June	2^{nd}, 10^{th}, 13^{th}, 21^{st}, 25^{th}
July	4^{th}, 18^{th}, 22^{nd}

3. Given the following parameters, values and base choice, design the test cases by combinational testing. (8’)

Input A	*Input B*	*Input C*	*Input D*
A1 A2	B1 B2 B3	C1 C2	D1 D2 D3

base choice:

Input A	*Input B*	*Input C*	*Input D*
A1	B2	C2	D3

4. Draw a graph to analyze white-box coverages relationship, including logic coverages and date-flow coverages. (8’)

5. Given the following relationship between fault detection and test cases, perform test case prioritization and calculate the ideal APFD. (8’)

	f1	f2	f3	f4	f5
t1	X				
t2		X	X	X	
t3	X		X	X	X
t4		X			
t5			X	X	X

6. Here is a vending machine for drink that can receive 50 cents coin. If you insert 50 cents and press the button of *Coke* or *Coffee* or *Tea*, then you will receive the drink. If you insert 1 dollar and press the button, then you will receive the drink and the change of 50 cents.

(1) List the causes, effects and intermediate nodes if necessary.

(2) Draw the cause-effect graph.

(3) Develop **extended entry decision table** from graph. (20')

7. Given the username is 6-20 characters, including English letters, numbers, '_' and '-', and the first character must be a letter or number. The password is 5-10 characters, including English letters and numbers.

(1) List the number of test cases that needed by four types of boundary value analysis respectively.

(2) Design the test cases by Robustness Boundary Value Analysis.

(3) Design the test cases by Equivalent Partitioning. (20')

8. Given the requirements of **Yesterday Problem**: the inputs are three integers: month, day, year and the output is the yesterday of the input. For example, the input is Dec 13, 2019, the output is Dec 12, 2019. The inputs must satisfy the following conditions:

   C1: 1<= month <= 12 C2: 1<= day <= 31 C3: 1900<= year <= 2100

   If any of the above conditions is failed, it will print an error message：The input is out of range.

(1) List the valid equivalence classes for the three inputs；

(2) List all condition stubs and action stubs, calculate the number of rules;

(3) Design the **extended entry decision table**. (20')